EBERLINE SERVICES

0065935

November 9, 2004

Mr. Steve Trent
Fluor Hanford Inc.
825 Jadwin Avenue
Richland, WA 99352

Reference: **P.O. #630**
Eberline Services R4-09-069-7087, SDG H2714

Dear Mr. Trent:

Enclosed is the data report for two soil samples designated under SAF No F03-025 received at Eberline Services on September 10, 2004. The samples were analyzed according to the accompanying chain-of-custody documents.

Please call if you have any questions concerning this report.

Sincerely,

Melissa C. Mannion
Senior Program Manager

MCM/mbr

Enclosure: Data Package

Analytical Services
2030 Wright Avenue
P.O. Box 4040
Richmond, California 94804-0040
(510) 235-2633 Fax (510) 235-0438
Toll Free (800) 841-5487
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1.0 GENERAL

Fluor Hanford Inc. (FH) Sample Delivery Group H2714 was composed of two soil samples designated under SAF No. F03-025 with a Project Designation of: 200-LW-1/LW-2 Characterization-Soil.

The samples under SDG H2714 were batched with the samples under SDG H2708.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist.

2.0 ANALYSIS NOTES

2.1 Tritium Analyses

The matrix spike percent recovery was 96%. The matrix spike was associated with a sample in SDG H2708.

No other problems were encountered during the course of the analyses.

2.2 Carbon-14 Analyses

No problems were encountered during the course of the analyses.

2.3 Nickel-63 Analyses

No problems were encountered during the course of the analyses.

2.4 Total Strontium Analyses

No problems were encountered during the course of the analyses.

2.5 Technetium-99 Analyses

No problems were encountered during the course of the analyses.

2.6 Isotopic Thorium Analyses

No problems were encountered during the course of the analyses.

2.7 Gamma Spectroscopy Analyses

No problems were encountered during the course of the analyses.

Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Melissa C. Mannion
Senior Program Manager

11/10/07
Date

E B E R L I N E S E R V I C E S / R I C H M O N D
SAMPLE DELIVERY GROUP H2714

SDG	7087
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. 630
Case no	SDG_H2714

S U M M A R Y D A T A S E C T I O N

T A B L E O F C O N T E N T S

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J. Verville
Prepared by

Reviewed by

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	11/08/04

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2714

SDG 7087
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_H2714

ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/08/04

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SDG 7087
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG_H2714

ABOUT THE DATA SUMMARY SECTION

DUPLICATES

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/08/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2714

SDG 7087
Contact Melissa C. Mannion

SAMPLE SUMMARY

Client Hanford
Contract No. 630
Case no SDG H2714

CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	LAB SAMPLE ID	SAF NO	CHAIN OF CUSTODY	COLLECTED
B191J9	216-S-20; 151.5'-154'	SOLID		R409069-01	F03-025	F03-025-121	09/07/04 07:05
B191K0	216-S-20; 191.5'-194'	SOLID		R409069-02	F03-025	F03-025-120	09/08/04 11:15
Method Blank		SOLID		R409024-04	F03-025		
Method Blank		SOLID		R409069-05	F03-025		
Lab Control Sample		SOLID		R409024-03	F03-025		
Lab Control Sample		SOLID		R409069-04	F03-025		
Duplicate (R409069-01)	216-S-20; 151.5'-154'	SOLID		R409069-03	F03-025		09/07/04 07:05
Duplicate (R409069-02)	216-S-20; 191.5'-194'	SOLID		R409069-06	F03-025		09/08/04 11:15

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CS
Version 3.06
Report date 11/08/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2714

SDG 7087
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. 630
Case no SDG H2714

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	DAYS SINCE COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7085		Method Blank	SOLID						R409024-04	7085-004
		Lab Control Sample	SOLID						R409024-03	7085-003
7087	F03-025-120	B191K0	SOLID	94.9	279 g		09/14/04	6	R409069-02	7087-002
	F03-025-121	B191J9	SOLID	84.0	300 g		09/10/04	3	R409069-01	7087-001
		Method Blank	SOLID						R409069-05	7087-005
		Lab Control Sample	SOLID						R409069-04	7087-004
		Duplicate (R409069-01)	SOLID	84.0	300 g		09/10/04	3	R409069-03	7087-003
		Duplicate (R409069-02)	SOLID	94.9	279 g		09/14/04	6	R409069-06	7087-006

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 11/08/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2714

PREP BATCH SUMMARY

SDG 7087
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Case no SDG H2714

TEST	MATRIX	METHOD	PREPARATION ERROR BATCH	2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Alpha Spectroscopy												
TH	SOLID	Thorium, Isotopic in Solids	7095-172	5.0	2			1	1	1/1		
Beta Counting												
SR	SOLID	Total Strontium in Solids	7095-172	10.0	2			1	1	1/1		
TC	SOLID	Technetium 99 in Solids	7095-172	10.0	1			1	1	1/1		
			7095-172B	10.0	1			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	7095-172	15.0	2			1	1	1/1		
Liquid Scintillation Counting												
C	SOLID	Carbon 14 in Solids	7095-172	10.0	2			1	1	1/1		
H	SOLID	Tritium in Solids	7095-172	10.0	2			1	1	1/1		
NI_L	SOLID	Nickel 63 in Solids	7095-172	10.0	2			1	1	1/1		

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.
Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 11/08/04

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2714

WORK SUMMARY

SDG 7087
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Case no SDG H2714

CLIENT SAMPLE ID / LOCATION / CUSTODY	SAF No	MATRIX	LAB SAMPLE ID / COLLECTED / RECEIVED	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
B191J9			R409069-01	7087-001	C		09/30/04	10/11/04	MWT	Carbon 14 in Solids
216-S-20; 151.5'-154'		SOLID	09/07/04	7087-001	GAM		09/29/04	09/30/04	CSS	Gamma Scan
F03-025-121	F03-025		09/10/04	7087-001	H		10/17/04	10/28/04	MWT	Tritium in Solids
				7087-001	NI_L		10/12/04	10/17/04	MWT	Nickel 63 in Solids
				7087-001	SR		10/06/04	10/08/04	MWT	Total Strontium in Solids
				7087-001	TC		10/13/04	10/14/04	MWT	Technetium 99 in Solids
				7087-001	TH		10/07/04	10/08/04	MWT	Thorium, Isotopic in Solids
B191K0			R409069-02	7087-002	C		09/30/04	10/11/04	MWT	Carbon 14 in Solids
216-S-20; 191.5'-194'		SOLID	09/08/04	7087-002	GAM		09/29/04	09/30/04	CSS	Gamma Scan
F03-025-120	F03-025		09/14/04	7087-002	H		10/17/04	10/28/04	MWT	Tritium in Solids
				7087-002	NI_L		10/12/04	10/17/04	MWT	Nickel 63 in Solids
				7087-002	SR		10/06/04	10/11/04	MWT	Total Strontium in Solids
				7087-002	TC	A1	11/01/04	11/02/04	MWT	Technetium 99 in Solids
				7087-002	TH		10/07/04	10/08/04	MWT	Thorium, Isotopic in Solids
Method Blank			R409024-04	7085-004	C		09/30/04	10/11/04	MWT	Carbon 14 in Solids
		SOLID		7085-004	GAM		09/29/04	09/30/04	CSS	Gamma Scan
	F03-025			7085-004	H		10/16/04	10/28/04	MWT	Tritium in Solids
				7085-004	NI_L		10/12/04	10/17/04	MWT	Nickel 63 in Solids
				7085-004	SR		10/06/04	10/11/04	MWT	Total Strontium in Solids
				7085-004	TC		10/12/04	10/14/04	MWT	Technetium 99 in Solids
				7085-004	TH		10/07/04	10/12/04	MWT	Thorium, Isotopic in Solids
Method Blank			R409069-05	7087-005	TC		11/01/04	11/02/04	MWT	Technetium 99 in Solids
		SOLID								
	F03-025									
Lab Control Sample			R409024-03	7085-003	C		09/30/04	10/11/04	MWT	Carbon 14 in Solids
		SOLID		7085-003	GAM		09/29/04	09/30/04	CSS	Gamma Scan
	F03-025			7085-003	H		10/16/04	10/28/04	MWT	Tritium in Solids
				7085-003	NI_L		10/12/04	10/17/04	MWT	Nickel 63 in Solids
				7085-003	SR		10/06/04	10/11/04	MWT	Total Strontium in Solids
				7085-003	TC		10/11/04	10/14/04	MWT	Technetium 99 in Solids
				7085-003	TH		10/07/04	10/12/04	MWT	Thorium, Isotopic in Solids
Lab Control Sample			R409069-04	7087-004	TC		11/01/04	11/02/04	MWT	Technetium 99 in Solids
		SOLID								
	F03-025									

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CWS
Version 3.06
Report date 11/08/04

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2714

SDG 7087
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. 630
Case no SDG H2714

CLIENT SAMPLE ID / LOCATION / CUSTODY	SAF No	MATRIX	LAB SAMPLE ID / COLLECTED / RECEIVED	PLANCHET	TEST	SUFFIX	ANALYZED	REVIEWED	BY	METHOD
Duplicate (R409069-01)			R409069-03	7087-003	C		09/30/04	10/11/04	MWT	Carbon 14 in Solids
216-S-20; 151.5'-154'		SOLID	09/07/04	7087-003	GAM		09/29/04	09/30/04	CSS	Gamma Scan
	F03-025		09/10/04	7087-003	H		10/17/04	10/28/04	MWT	Tritium in Solids
				7087-003	NI_L		10/12/04	10/17/04	MWT	Nickel 63 in Solids
				7087-003	SR		10/06/04	10/11/04	MWT	Total Strontium in Solids
				7087-003	TC		10/11/04	10/14/04	MWT	Technetium 99 in Solids
				7087-003	TH		10/07/04	10/08/04	MWT	Thorium, Isotopic in Solids
Duplicate (R409069-02)			R409069-06	7087-006	TC		11/01/04	11/02/04		Technetium 99 in Solids
216-S-20; 191.5'-194'		SOLID	09/08/04							
	F03-025		09/14/04							

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
C	F03-025	Carbon 14 in Solids	C14_COX_LSC	2			1	1	1	5
GAM	F03-025	Gamma Scan	GAMMA_GS	2			1	1	1	5
H	F03-025	Tritium in Solids	906.0_H3_LSC	2			1	1	1	5
NI_L	F03-025	Nickel 63 in Solids	NI63_LSC	2			1	1	1	5
SR	F03-025	Total Strontium in Solids	SRTOT_SEP_PRECIP_GPC	2			1	1	1	5
TC	F03-025	Technetium 99 in Solids	TC99_TR_SEP_LSC	2			2	2	2	8
TH	F03-025	Thorium, Isotopic in Solids	THISO_IE_PLATE_AEA	2			1	1	1	5
TOTALS				14			8	8	8	38

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CWS
Version 3.06
Report date 11/08/04

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2714

R409024-04 Method Blank

METHOD BLANK

SDG 7087 Client/Case no Hanford SDG H2714
Contact Melissa C. Mannion Contract No. 630

Lab sample id R409024-04 Client sample id Method Blank
Dept sample id 7085-004 Material/Matrix SOLID
SAF No F03-025

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-0.613	0.26	0.50	400	U	H
Carbon 14	14762-75-5	-1.37	2.6	4.5	50	U	C
Nickel 63	13981-37-8	0.577	1.4	2.3	30	U	NI_L
Total Strontium	SR-RAD	-0.076	0.17	0.37	1.0	U	SR
Technetium 99	14133-76-7	0.262	0.18	0.54	15	U	TC
Thorium 228	14274-82-9	0.006	0.036	0.067	1.0	U	TH
Thorium 230	14269-63-7	-0.090	0.097	0.22	1.0	U	TH
Thorium 232	TH-232	0	0.024	0.058	1.0	U	TH
Potassium 40	13966-00-2	U		0.23		U	GAM
Cobalt 60	10198-40-0	U		0.023	0.050	U	GAM
Cesium 137	10045-97-3	U		0.018	0.10	U	GAM
Radium 226	13982-63-3	U		0.038	0.10	U	GAM
Radium 228	15262-20-1	U		0.084	0.20	U	GAM
Europium 152	14683-23-9	U		0.049	0.10	U	GAM
Europium 154	15585-10-1	U		0.061	0.10	U	GAM
Europium 155	14391-16-3	U		0.036	0.10	U	GAM
Thorium 228	14274-82-9	U		0.066		U	GAM
Thorium 232	TH-232	U		0.084		U	GAM
Uranium 235	15117-96-1	U		0.055		U	GAM
Uranium 238	U-238	U		2.2		U	GAM
Americium 241	14596-10-2	U		0.040		U	GAM

200-LW-1/LW-2 Characterization-Soil

QC-BLANK #49076

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 11/08/04

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2714

R409069-05 Method Blank

METHOD BLANK

SDG	7087	Client/Case no	Hanford SDG H2714
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R409069-05	Client sample id	Method Blank
Dept sample id	7087-005	Material/Matrix	SOLID
		SAF No	F03-025

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Technetium 99	14133-76-7	0.043	0.18	0.36	15	U	TC

200-LW-1/LW-2 Characterization-Soil

QC-BLANK 49531

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/08/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2714

R409024-03

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7087
Contact Melissa C. Mannion

Client/Case no Hanford SDG H2714
Contract No. 630

Lab sample id R409024-03
Dept sample id 7085-003

Client sample id Lab Control Sample
Material/Matrix SOLID
SAF No F03-025

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Tritium	11.7	0.61	0.48	400		H	12.0	0.48	98	82-118	80-120
Carbon 14	2040	21	4.9	50		C	2130	85	96	84-116	80-120
Nickel 63	223	4.8	2.5	30		NI_L	226	9.0	99	84-116	80-120
Total Strontium	10.5	0.62	0.27	1.0		SR	10.2	0.41	103	81-119	80-120
Technetium 99	99.3	2.3	0.59	15		TC	109	4.4	91	85-115	80-120
Thorium 230	40.5	1.6	0.20	1.0		TH	42.0	1.7	96	89-111	80-120
Cobalt 60	2.76	0.15	0.077	0.050		GAM	2.80	0.11	99	76-124	80-120
Cesium 137	2.57	0.13	0.094	0.10		GAM	2.63	0.11	98	76-124	80-120

200-LW-1/LW-2 Characterization-Soil

QC-LCS #49075

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 11/08/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2714

R409069-04

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7087
Contact Melissa C. Mannion

Client/Case no Hanford SDG H2714
Contract No. 630

Lab sample id R409069-04
Dept sample id 7087-004

Client sample id Lab Control Sample
Material/Matrix SOLID
SAF No F03-025

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Technetium 99	116	2.6	0.38	15		TC	109	4.4	106	83-117	80-120

200-LW-1/LW-2 Characterization-Soil

QC-LCS 49530

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 11/08/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2714

R409069-03

B191J9

DUPLICATE

SDG 7087
Contact Melissa C. Mannion

DUPLICATE
Lab sample id R409069-03
Dept sample id 7087-003
% solids 84.0

ORIGINAL
Lab sample id R409069-01
Dept sample id 7087-001
Received 09/10/04
% solids 84.0

Client/Case no Hanford SDG H2714
Contract No. 630
Client sample id B191J9
Location/Matrix 216-S-20; 151.5'-154' SOLID
Collected/Weight 09/07/04 07:05 300 g
Custody/SAF No F03-025-121 F03-025

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ PROT TOT LIMIT
Tritium	3.14	0.41	0.51	400		H	2.50	0.39	0.50		23	37
Carbon 14	-1.04	2.5	4.3	50	U	C	-0.650	2.7	4.7	U	-	
Nickel 63	0.581	1.6	2.7	30	U	NI_L	0.466	1.5	2.5	U	-	
Total Strontium	0.031	0.13	0.26	1.0	U	SR	0.083	0.14	0.28	U	-	
Technetium 99	0.150	0.22	0.50	15	U	TC	0.164	0.20	0.41	U	-	
Thorium 228	1.10	0.17	0.084	1.0		TH	0.888	0.14	0.065		21	35
Thorium 230	0.784	0.18	0.21	1.0		TH	0.648	0.15	0.19		19	50
Thorium 232	0.981	0.15	0.078	1.0		TH	1.03	0.15	0.071		5	33
Potassium 40	13.0	0.66	0.46			GAM	13.8	0.92	0.55		6	34
Cobalt 60	U		0.043	0.050	U	GAM	U		0.062	U	-	
Cesium 137	U		0.039	0.10	U	GAM	U		0.057	U	-	
Radium 226	U		0.10	0.10	U	GAM	U		0.15	U	-	
Radium 228	U		0.22	0.20	U	GAM	U		0.31	U	-	
Europium 152	U		0.11	0.10	U	GAM	U		0.16	U	-	
Europium 154	U		0.14	0.10	U	GAM	U		0.22	U	-	
Europium 155	U		0.079	0.10	U	GAM	U		0.11	U	-	
Thorium 228	1.20	0.073	0.059			GAM	1.19	0.10	0.086		1	35
Thorium 232	U		0.22		U	GAM	U		0.31	U	-	
Uranium 235	U		0.13		U	GAM	U		0.19	U	-	
Uranium 238	U		4.8		U	GAM	U		7.0	U	-	
Americium 241	U		0.045		U	GAM	U		0.064	U	-	

200-LW-1/LW-2 Characterization-Soil

QC-DUP#1 48951

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date 11/08/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2714

R409069-06 B191K0

DUPLICATE

SDG 7087		Client/Case no Hanford	SDG H2714
Contact Melissa C. Mannion		Contract No. 630	
DUPLICATE	ORIGINAL		
Lab sample id R409069-06	Lab sample id R409069-02	Client sample id B191K0	
Dept sample id 7087-006	Dept sample id 7087-002	Location/Matrix 216-S-20; 191.5'-194'	SOLID
	Received 09/14/04	Collected/Weight 09/08/04 11:15	279 g
% solids 94.9	% solids 94.9	Custody/SAF No F03-025-120	F03-025

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ PROT TOT LIMIT
Technetium 99	0.180	0.21	0.39	15	U	TC	0.264	0.22	0.38	U	-	

200-LW-1/LW-2 Characterization-Soil

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date 11/08/04

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2714

R409069-01 B191J9

DATA SHEET

SDG	7087	Client/Case no	Hanford SDG_H2714
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R409069-01	Client sample id	B191J9
Dept sample id	7087-001	Location/Matrix	216-S-20; 151.5'-154' SOLID
Received	09/10/04	Collected/Weight	09/07/04 07:05 300 g
% solids	84.0	Custody/SAF No	F03-025-121 F03-025

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	2.50	0.39	0.50	400		H
Carbon 14	14762-75-5	-0.650	2.7	4.7	50	U	C
Nickel 63	13981-37-8	0.466	1.5	2.5	30	U	NI_L
Total Strontium	SR-RAD	0.083	0.14	0.28	1.0	U	SR
Technetium 99	14133-76-7	0.164	0.20	0.41	15	U	TC
Thorium 228	14274-82-9	0.888	0.14	0.065	1.0		TH
Thorium 230	14269-63-7	0.648	0.15	0.19	1.0		TH
Thorium 232	TH-232	1.03	0.15	0.071	1.0		TH
Potassium 40	13966-00-2	13.8	0.92	0.55			GAM
Cobalt 60	10198-40-0	U		0.062	0.050	U	GAM
Cesium 137	10045-97-3	U		0.057	0.10	U	GAM
Radium 226	13982-63-3	U		0.15	0.10	U	GAM
Radium 228	15262-20-1	U		0.31	0.20	U	GAM
Europium 152	14683-23-9	U		0.16	0.10	U	GAM
Europium 154	15585-10-1	U		0.22	0.10	U	GAM
Europium 155	14391-16-3	U		0.11	0.10	U	GAM
Thorium 228	14274-82-9	1.19	0.10	0.086			GAM
Thorium 232	TH-232	U		0.31		U	GAM
Uranium 235	15117-96-1	U		0.19		U	GAM
Uranium 238	U-238	U		7.0		U	GAM
Americium 241	14596-10-2	U		0.064		U	GAM

200-LW-1/LW-2 Characterization-Soil

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/08/04

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2714

R409069-02 B191K0

DATA SHEET

SDG	7087	Client/Case no	Hanford SDG H2714
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R409069-02	Client sample id	B191K0
Dept sample id	7087-002	Location/Matrix	216-S-20; 191.5'-194' SOLID
Received	09/14/04	Collected/Weight	09/08/04 11:15 279 g
% solids	94.9	Custody/SAF No	F03-025-120 F03-025

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	6.88	0.48	0.45	400		H
Carbon 14	14762-75-5	-2.05	2.4	4.1	50	U	C
Nickel 63	13981-37-8	1.47	1.6	2.6	30	U	NI_L
Total Strontium	SR-RAD	0.007	0.11	0.23	1.0	U	SR
Technetium 99	14133-76-7	0.264	0.22	0.38	15	U	TC
Thorium 228	14274-82-9	0.558	0.13	0.086	1.0		TH
Thorium 230	14269-63-7	0.563	0.15	0.20	1.0		TH
Thorium 232	TH-232	0.461	0.12	0.071	1.0		TH
Potassium 40	13966-00-2	7.32	0.44	0.21			GAM
Cobalt 60	10198-40-0	U		0.023	0.050	U	GAM
Cesium 137	10045-97-3	U		0.021	0.10	U	GAM
Radium 226	13982-63-3	0.248	0.050	0.050	0.10		GAM
Radium 228	15262-20-1	0.424	0.089	0.089	0.20		GAM
Europium 152	14683-23-9	U		0.055	0.10	U	GAM
Europium 154	15585-10-1	U		0.076	0.10	U	GAM
Europium 155	14391-16-3	U		0.064	0.10	U	GAM
Thorium 228	14274-82-9	0.306	0.028	0.029			GAM
Thorium 232	TH-232	0.424	0.089	0.089			GAM
Uranium 235	15117-96-1	U		0.082		U	GAM
Uranium 238	U-238	U		2.6		U	GAM
Americium 241	14596-10-2	U		0.10		U	GAM

200-LW-1/LW-2 Characterization-Soil

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/08/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2714

Test TH Matrix SOLID
SDG 7087
Contact Melissa C. Mannion

METHOD SUMMARY

THORIUM, ISOTOPIC IN SOLIDS
ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H2714

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Thorium 230
Preparation batch 7095-172					
B191J9	R409069-01			7087-001	0.648
B191K0	R409069-02			7087-002	0.563
BLK (QC ID=49076)	R409024-04			7085-004	U
LCS (QC ID=49075)	R409024-03			7085-003	ok
Duplicate (R409069-01)	R409069-03			7087-003	ok
Nominal values and limits from method 200-LW-1/LW-2 Characterization-Soil				RDLs (pCi/g)	1.0

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7095-172 2σ prep error 5.0 % Reference Lab Notebook 7095 pg. 172																
B191J9	R409069-01			0.19	0.250			87		1142			30	10/07/04	10/07	SS-061
B191K0	R409069-02			0.20	0.250			73		1142			29	10/07/04	10/07	SS-062
BLK (QC ID=49076)	R409024-04			0.22	0.250			80		1143				10/07/04	10/07	SS-058
LCS (QC ID=49075)	R409024-03			0.20	0.250			86		1143				10/07/04	10/07	SS-057
Duplicate (R409069-01) (QC ID=48951)	R409069-03			0.21	0.250			91		1143			30	10/07/04	10/07	SS-063
Nominal values and limits from method				1.0	0.250			20-105		150			180			

PROCEDURES	REFERENCE	THISO_IE_PLATE_AEA
	CP-061	Determination of Moisture Content in Solid Samples rev 3
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-900	Thorium in Water and Dissolved Solid Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.20 ± 0.023
YIELD 83 ± 14

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 11/08/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2714

Test SR Matrix SOLID
SDG 7087
Contact Melissa C. Mannion

METHOD SUMMARY

TOTAL STRONTIUM IN SOLIDS
BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG H2714

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Total Strontium	
Preparation batch 7095-172						
B191J9	R409069-01			7087-001	U	
B191K0	R409069-02			7087-002	U	
BLK (QC ID=49076)	R409024-04			7085-004	U	
LCS (QC ID=49075)	R409024-03			7085-003	ok	
Duplicate (R409069-01)	R409069-03			7087-003	-	U
Nominal values and limits from method				RDLs (pCi/g)	1.0	
200-LW-1/LW-2 Characterization-Soil						

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7095-172	2σ prep error 10.0 %			Reference Lab Notebook 7095 pg. 172												
B191J9	R409069-01			0.28	1.00			91		100			29	10/06/04	10/06	GRB-203
B191K0	R409069-02			0.23	1.00			94		100			28	10/06/04	10/06	GRB-224
BLK (QC ID=49076)	R409024-04			0.37	1.00			74		100				10/06/04	10/06	GRB-232
LCS (QC ID=49075)	R409024-03			0.27	1.00			81		100				10/06/04	10/06	GRB-223
Duplicate (R409069-01) (QC ID=48951)	R409069-03			0.26	1.00			93		100			29	10/06/04	10/06	GRB-229
Nominal values and limits from method				1.0	1.00			30-105		100			180			

PROCEDURES	REFERENCE	
		SRTOT_SEP_PRECIP_GPC
	CP-061	Determination of Moisture Content in Solid Samples rev 3
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-380	Strontium in Water Samples, rev 2

AVERAGES ± 2 SD	MDA	0.28	± 0.11
FOR 5 SAMPLES	YIELD	87	± 17

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 11/08/04

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2714

Test TC Matrix SOLID
SDG 7087
Contact Melissa C. Mannion

METHOD SUMMARY

TECHNETIUM 99 IN SOLIDS
BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG H2714

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Technetium 99	
Preparation batch 7095-172						
B191J9	R409069-01			7087-001	U	
BLK (QC ID=49076)	R409024-04			7085-004	U	
LCS (QC ID=49075)	R409024-03			7085-003	ok	
Duplicate (R409069-01)	R409069-03			7087-003	-	U
Preparation batch 7095-172B						
B191K0	R409069-02		A1	7087-002	U	
BLK (QC ID=49531)	R409069-05			7087-005	U	
LCS (QC ID=49530)	R409069-04			7087-004	ok	
Duplicate (R409069-02)	R409069-06			7087-006	-	U
Nominal values and limits from method 200-LW-1/LW-2 Characterization-Soil				RDLs (pCi/g)	15	

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7095-172 2σ prep error 10.0 % Reference Lab Notebook 7095 pg. 172																
B191J9	R409069-01			0.41	1.00			90	100				36	10/09/04	10/13	GRB-201
BLK (QC ID=49076)	R409024-04			0.54	1.00			82	68					10/09/04	10/12	GRB-217
LCS (QC ID=49075)	R409024-03			0.59	1.00			86	50					10/09/04	10/11	GRB-223
Duplicate (R409069-01) (QC ID=48951)	R409069-03			0.50	1.00			100	50				34	10/09/04	10/11	GRB-224
Preparation batch 7095-172B 2σ prep error 10.0 % Reference Lab Notebook 7095 pg. 172																
B191K0	R409069-02		A1	0.38	1.06			91	100				54	10/29/04	11/01	GRB-232
BLK (QC ID=49531)	R409069-05			0.36	1.00			96	100					10/29/04	11/01	GRB-203
LCS (QC ID=49530)	R409069-04			0.38	1.00			95	100					10/29/04	11/01	GRB-202
Duplicate (R409069-02)	R409069-06			0.39	1.06			88	100				54	10/29/04	11/01	GRB-204
Nominal values and limits from method				15	1.00			20-105		50			180			

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 11/08/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2714

Test TC Matrix
SDG 7087
Contact Melissa C. Mannion

METHOD SUMMARY, cont.

TECHNETIUM 99 IN SOLIDS

BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG H2714

PROCEDURES	REFERENCE	TC99_TR_SEP_LSC
	CP-431	Technetium-99 Purification of Soil or Resin by Extraction Chromatography, rev 2
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD	MDA	0.44	±	0.17
FOR 8 SAMPLES	YIELD	91	±	12

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 11/08/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2714

Test GAM Matrix SOLID
SDG 7087
Contact Melissa C. Mannion

METHOD SUMMARY

GAMMA SCAN
GAMMA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H2714

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Cobalt 60		Cesium 137	
Preparation batch 7095-172								
B191J9	R409069-01			7087-001	U		U	
B191K0	R409069-02			7087-002	U		U	
BLK (QC ID=49076)	R409024-04			7085-004	U		U	
LCS (QC ID=49075)	R409024-03			7085-003	ok		ok	
Duplicate (R409069-01)	R409069-03			7087-003	-	U	-	U
Nominal values and limits from method				RDLs (pCi/g)	0.050		0.10	
200-LW-1/LW-2 Characterization-Soil								

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7095-172	2σ prep error 15.0 %	Reference Lab Notebook 7095 pg. 172														
B191J9	R409069-01			0.46	171					407			22	09/22/04	09/29	JR,07,00
B191K0	R409069-02			0.18	214					850			21	09/22/04	09/29	JR,05,00
BLK (QC ID=49076)	R409024-04			0.14	171					407				09/22/04	09/29	JR,04,00
LCS (QC ID=49075)	R409024-03			0.077	171					407				09/22/04	09/29	JR,03,00
Duplicate (R409069-01) (QC ID=48951)	R409069-03			0.34	171					850			22	09/22/04	09/29	JR,07,00
Nominal values and limits from method				0.050	171					100			180			

PROCEDURES	REFERENCE	GAMMA_GS
	CP-100	Ge(Li) Preparation for Commercial Samples, rev 7

AVERAGES ± 2 SD	MDA	0.24	± 0.31
FOR 5 SAMPLES	YIELD		±

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 11/08/04

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2714

Test C Matrix SOLID
SDG 7087
Contact Melissa C. Mannion

METHOD SUMMARY

CARBON 14 IN SOLIDS
LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. 630
Contract SDG H2714

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Carbon 14	
Preparation batch 7095-172						
B191J9	R409069-01			7087-001	U	
B191K0	R409069-02			7087-002	U	
BLK (QC ID=49076)	R409024-04			7085-004	U	
LCS (QC ID=49075)	R409024-03			7085-003	ok	
Duplicate (R409069-01)	R409069-03			7087-003	-	U
Nominal values and limits from method				RDLs (pCi/g)	50	
200-LW-1/LW-2 Characterization-Soil						

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7095-172	2σ prep error 10.0 %			Reference Lab Notebook 7095 pg. 172												
B191J9	R409069-01			4.7	0.294			100		50			23	09/29/04	09/30	LSC-007
B191K0	R409069-02			4.1	0.324			100		50			22	09/29/04	09/30	LSC-007
BLK (QC ID=49076)	R409024-04			4.5	0.300			100		50				09/29/04	09/30	LSC-007
LCS (QC ID=49075)	R409024-03			4.9	0.300			100		42				09/29/04	09/30	LSC-007
Duplicate (R409069-01) (QC ID=48951)	R409069-03			4.3	0.311			100		50			23	09/29/04	09/30	LSC-007
Nominal values and limits from method				50	0.300					25			180			

PROCEDURES REFERENCE C14_COX_LSC
CP-251 Tritium/Carbon-14 Oxidation, rev 8

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 4.5 ± 0.63
YIELD 100 ± 0

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 11/08/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2714

Test H Matrix SOLID
SDG 7087
Contact Melissa C. Mannion

METHOD SUMMARY

TRITIUM IN SOLIDS
LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. 630
Contract SDG H2714

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Tritium
Preparation batch 7095-172					
B191J9	R409069-01			7087-001	2.50
B191K0	R409069-02			7087-002	6.88
BLK (QC ID=49076)	R409024-04			7085-004	U
LCS (QC ID=49075)	R409024-03			7085-003	ok
Duplicate (R409069-01)	R409069-03			7087-003	ok
Nominal values and limits from method 200-LW-1/LW-2 Characterization-Soil				RDLs (pCi/g)	400

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7095-172 2σ prep error 10.0 % Reference Lab Notebook 7095 pg. 172																
B191J9	R409069-01			0.50	21.2			31		50			40	10/15/04	10/17	LSC-007
B191K0	R409069-02			0.45	21.9			32		50			39	10/15/04	10/17	LSC-007
BLK (QC ID=49076)	R409024-04			0.50	20.0			33		50				10/15/04	10/16	LSC-007
LCS (QC ID=49075)	R409024-03			0.48	20.0			33		50				10/15/04	10/16	LSC-007
Duplicate (R409069-01) (QC ID=48951)	R409069-03			0.51	20.7			31		50			40	10/15/04	10/17	LSC-007
Nominal values and limits from method				400	20.0					25			180			

PROCEDURES REFERENCE 906.0_H3_LSC
CP-216 Tritium in Solid Samples by Azeotropic Distillation, rev 8

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.49 ± 0.048
YIELD 32 ± 2

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 11/08/04

00000026

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2714

Test NI L Matrix SOLID
SDG 7087
Contact Melissa C. Mannion

METHOD SUMMARY

NICKEL 63 IN SOLIDS
LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. 630
Contract SDG H2714

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Nickel 63	
Preparation batch 7095-172						
B191J9	R409069-01			7087-001	U	
B191K0	R409069-02			7087-002	U	
BLK (QC ID=49076)	R409024-04			7085-004	U	
LCS (QC ID=49075)	R409024-03			7085-003	ok	
Duplicate (R409069-01)	R409069-03			7087-003	-	U
Nominal values and limits from method 200-LW-1/LW-2 Characterization-Soil				RDLs (pCi/g)	30	

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7095-172	2σ prep error 10.0 %			Reference Lab Notebook 7095 pg. 172												
B191J9	R409069-01			2.5	0.500			83		100			35	10/10/04	10/12	LSC-004
B191K0	R409069-02			2.6	0.500			80		100			34	10/10/04	10/12	LSC-004
BLK (QC ID=49076)	R409024-04			2.3	0.500			95		100				10/10/04	10/12	LSC-004
LCS (QC ID=49075)	R409024-03			2.5	0.500			97		75				10/10/04	10/12	LSC-004
Duplicate (R409069-01) (QC ID=48951)	R409069-03			2.7	0.500			77		100			35	10/10/04	10/12	LSC-004
Nominal values and limits from method				30	0.500			30-105		25			180			

PROCEDURES	REFERENCE	N163_LSC
	CP-061	Determination of Moisture Content in Solid Samples rev 3
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-280	Nickel-63 Purification, rev 3

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 2.5 ± 0.30
YIELD 86 ± 18

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 11/08/04

00000027

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2714

SDG 7087
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2714

SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

* LAB SAMPLE ID is the lab's primary identification for a sample.

* DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.

* CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.

* QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

  QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

* All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/08/04

SDG 7087
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2714

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

* The preparation batches are shown in the same order as the Method Summary Reports are printed.

* Only analyses of planchets relevant to the SDG are included.

* Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.

* The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

  These qualifiers should be reviewed as follows:

  X Some data has been manually entered or modified. Transcription errors are possible.

  P One or more results are 'preliminary'. The data is not ready for final reporting.

  2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

  Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/08/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2714

SDG 7087
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_H2714

WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

* TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.

* SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.

* The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.

* PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.

* For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

* The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/08/04

SDG 7087
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2714

DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

* TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.

* The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

  The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

* ERRORs can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.

* A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.

* When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

U The RESULT is less than the MDA (Minimum Detectable Activity).

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/08/04

SDG 7087
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG_H2714

DATA SHEET

If the MDA is blank, the ERROR is used as the limit.

J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.

B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.

Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.

For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.

L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.

H Similar to 'L' except the recovery was high.

P The RESULT is 'preliminary'.

X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.

2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

* An MDA is underlined if it is bigger than its RDL.

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Protocol Hanford
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Form DVD-RG
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GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG_H2714

DATA SHEET

* An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA may not be a good estimate of the 'real' minimum detectable activity.

* A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.

* When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/08/04

SDG 7087
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2714

LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.

* An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

  An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

* REC (Recovery) is RESULT divided by ADDED expressed as a percent.

* The first, computed limits for the recovery reflect:

  1. The error of RESULT, including that introduced by rounding the result prior to printing.

     If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

  2. The error of ADDED.

  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

* The second limits are protocol defined upper and lower QC limits for the recovery.

* The recovery is underlined if it is outside either of these ranges.

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Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/08/04

SDG 7087
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_H2714

DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

  If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.

* The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTs divided by their average expressed as a percent.

  If both RESULTs are less than their MDAs, no RPD is computed and a '-' is printed.

  For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

* The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTs prior to printing.

  If this limit is labeled TOT, it includes the preparation error in the RESULTs. If labeled CNT, it does not.

  This value reported for this limit is at most 999.

* The second limit for the RPD is the larger of:

  1. A fixed percentage specified in the protocol.

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Protocol Hanford
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SDG 7087
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2714

DUPLICATE

2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

* The RPD is underlined if it is greater than either limit.

* If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

  Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

* The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

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Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/08/04

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SDG 7087
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_H2714

MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

  If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.

* An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

  An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

* REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.

* The first, computed limits for the recovery reflect:

  1. The errors of the two RESULTs, including those introduced by rounding them prior to printing.

     If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

  2. The error of ADDED.

  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

* The second limits are protocol defined upper and lower QC limits

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Form DVD-RG
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Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG_H2714

MATRIX SPIKE

for the recovery.

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

* The recovery is underlined (out of spec) if it is outside either of these ranges.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/08/04

SDG 7087
Contact Melissa C. Mannion

REPORT GUIDE

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Contract No. 630
Case no SDG_H2714

METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

* Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

  There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

* The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

  The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

* If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

  The J and X flags are as on the data sheet.

* Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.

* Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data'

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/08/04

METHOD SUMMARY

means no amount ADDED was specified. 'LOW' and 'HIGH' correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

* Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.

* If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.

  MDAs are underlined if greater than the printed RDL.

* Aliquots are underlined if less than the nominal value specified for the method.

* Prepareation factors are underlined if greater than the nominal value specified for the method.

* Dilution factors are underlined if greater than the nominal value specified for the method.

* Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.

* Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.

* Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.

SDG 7087
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2714

METHOD SUMMARY

* Count times are underlined if less than the nominal value specified for the method.

* Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.

* Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.

* Days Held are underlined if greater than the holding time specified in the protocol.

* Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1÷3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant

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Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/08/04

SDG 7087
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG_H2714

METHOD SUMMARY

results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included. No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/08/04

FLUOR Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F03-025-121	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Pope/Pfister/Wiberg/Tyra	TRENT, STEVE	373-5689	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days

SAMPLING LOCATION	PROJECT DESIGNATION	SAF NO.
216-S-20; ~~138ft-160.5ft~~ 151.5'-154' 48in 9-7-04	200-LW-1/LW-2 Characterization - Soil H2714 (7087)	F03-025

ICE CHEST NO.	FIELD LOGBOOK NO.	COA	METHOD OF SHIPMENT
GRP-04-011	HNF-N-356 1	119143ES10	Federal Express

SHIPPED TO	OFFSITE PROPERTY NO.	BILL OF LADING/AIR BILL NO.
Eberline Services	See PTR 14084	See PTR 14084

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegitation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
N/A

Tie to Rad Screen B191H7

SPECIAL HANDLING AND/OR STORAGE
N/A

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	PRESERVATION	TYPE OF CONTAINER	NO. OF CONTAINER(S)	VOLUME	SAMPLE ANALYSIS
				Cool 4C	aG	1	250mL	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
				None	aG	1	250mL	SEE ITEM (2) IN SPECIAL INSTRUCTIONS
B191J9	SOIL	9-7-04	0705	/	X			

MTS 8-4-04

CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JSPope/48Tyra	9-7-04 1115	190-026/Fridge #1	9-7-04 1115
190-026/Fridge #1	9/9/04 0900	Greg Thomas/Greg Thomas	9/9/04 0900
Greg Thomas/Greg Thomas	9/9/04 0900	Fed Ex	
Fed Ex	9/10/04	[signature]	9/10/04 1030

SIGN/ PRINT NAMES

SPECIAL INSTRUCTIONS

MTS 8-4-04

(~~1)Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1~~; (2)Nickel-63; Gamma Spec - Radium {Radium-226, Radium-228} Technetium-99; Isotopic Thorium {Thorium-232} Tritium - H3; Carbon-14; Strontium-89,90 -- Total Sr;

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

FLUOR Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F03-025-120	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8N	DATA TURNAROUND
Pope/Pfister/Wlberg/Tyra	TRENT, STEVE	373-5689	TRENT, SJ	AIR QUALITY ☐	45 Days / 45 Days

SAMPLING LOCATION	PROJECT DESIGNATION	SAF NO.
216-S-20; ~~97.5ft 100R~~ 202 ~~200~~ 5 191.5 - 199' 1st 8/3/04	200-LW-1/LW-2 Characterization - Soil H2714 (7087)	F03-025

ICE CHEST NO.	FIELD LOGBOOK NO.	COA	METHOD OF SHIPMENT
GFF-03-021	HNF-N-356 1	119143ES10	Federal Express

SHIPPED TO	OFFSITE PROPERTY NO.	BILL OF LADING/AIR BILL NO.
Eberline Services	See PTR 14113	See PTR 14113

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegitation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
NA BT 9/13/04
Tie to Rad Screen
B191H8

SPECIAL HANDLING AND/OR STORAGE
N/A

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	PRESERVATION	TYPE OF CONTAINER	NO. OF CONTAINER(S) / VOLUME	SAMPLE ANALYSIS
				Cool 4C	aG	1 / 250mL	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
				None	aG	1 / 250mL	SEE ITEM (2) IN SPECIAL INSTRUCTIONS
B191K0	SOIL	9-8-04	1115		X		

CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R. Pfister/Rob Pfis	9/08/04 1340	MO-026 FRIG #1	9/8/04 1346
MO-026 Frig #1	9/13/04 1130	Greg Thomas/Greg Thomas	9/13/04 1130
Greg Thomas/Greg Thomas	9/3/04 1130	Fed Ex	
Fed Ex	9/14/04 9:15	Jeff Lawson	9/14/04 11:00

SPECIAL INSTRUCTIONS

FYI 8-4-04
(~~1)Chromium Hex - 7196; NO2/NO3 - 353.2; Sulfides - 9030; Oil & Grease - 413.1;~~
(2)Nickel-63; Gamma Spec - Radium {Radium-226, Radium-228} Technetium-99; Isotopic Thorium {Thorium-232} Tritium - H3; Carbon-14; Strontium-89,90 -- Total Sr;

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

EBERLINE SERVICES

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: Ehser Hanford City Richland State WA

Date/Time received 9/14/04 9:15 CoC No. F03-025-120, 165, 166, 171

Container I.D. No. GPP 03-021 Requested TAT (Days) 45 P.O. Received Yes [ ] No [ ]

INSPECTION

1.	Custody seals on shipping container intact?	Yes [Y]	No [ ]	N/A [ ]
2.	Custody seals on shipping container dated & signed?	Yes [Y]	No [ ]	N/A [ ]
3.	Custody seals on sample containers intact?	Yes [Y]	No [ ]	N/A [ ]
4.	Custody seals on sample containers dated & signed?	Yes [Y]	No [ ]	N/A [ ]
5.	Packing material is:	Wet [ ]	Dry [Y]	
6.	Number of samples in shipping container: 4	Sample Matrix Soil		
7.	Number of containers per sample: _____	(Or see CoC ✓)		
8.	Samples are in correct container	Yes [Y]	No [ ]	
9.	Paperwork agrees with samples?	Yes [Y]	No [ ]	
10.	Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [Y]			
11.	Samples are: In good condition [Y] Leaking [ ] Broken Container [ ] Missing [ ]			
12.	Samples are: Preserved [ ] Not preserved [ ] pH _____ Preservative _____			
13.	Describe any anomalies: _____			
14.	Was P.M. notified of any anomalies?	Yes [ ]	No [ ]	Date _____
15.	Inspected by Adam	Date: 9/14/04	Time: 1100	

Customer Sample No.	cpm	mR/hr	wipe	Customer Sample No.	cpm	mR/hr	wipe
Sample ID	B19445		for	Shaw			
	B19446						
ID	B191K0		for	chemistry			
	B191K1						
This	was	log-in	under	SDG# H2714	on	Enviro	Batch

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. _____ Calibration date _____

EBERLINE SERVICES

RICHMOND, CA LABORATORY 1 for NUC ...

SAMPLE RECEIPT CHECKLIST 1 for SHAW

Client: Fluor Hanford City Richland State WA

Date/Time received 9/18/04 10:15 CoC No. F03-025-121, 164

Container I.D. No. GRP 04-01 Requested TAT (Days) 45 P.O. Received Yes [ ] No [ ]

INSPECTION

1.	Custody seals on shipping container intact?	Yes [✓]	No [ ]	N/A [ ]
2.	Custody seals on shipping container dated & signed?	Yes [✓]	No [ ]	N/A [ ]
3.	Custody seals on sample containers intact?	Yes [✓]	No [ ]	N/A [ ]
4.	Custody seals on sample containers dated & signed?	Yes [✓]	No [ ]	N/A [ ]
5.	Packing material is:	Wet [ ]	Dry [X]	
6.	Number of samples in shipping container: 2	Sample Matrix Soil		
7.	Number of containers per sample: _____	(Or see CoC ~)		
8.	Samples are in correct container	Yes [✓]	No [ ]	
9.	Paperwork agrees with samples?	Yes [✓]	No [ ]	
10.	Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [✓]			
11.	Samples are: In good condition [✓] Leaking [ ] Broken Container [ ] Missing [ ]			
12.	Samples are: Preserved [ ] Not preserved [ ] pH _____ Preservative _____			
13.	Describe any anomalies: _____			
14.	Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____			
15.	Inspected by _____ Date: 9/20/04 Time: 10:30			

Customer Sample No.	cpm	mR/hr	wipe	Customer Sample No.	cpm	mR/hr	wipe
Sample ID B19444 to Shaw.							

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. _____ Calibration date 00000046